

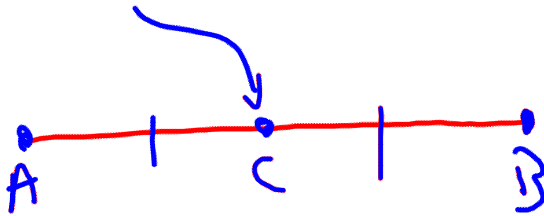
Unit 5 Day 1

## Classifying Triangles

Target 5A

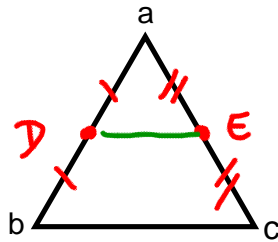
Solving problems involving midsegments of a triangle

What is a midpoint? tell me what you know...



**Midsegment**-A segment formed by 2 midpoints of sides of a triangle.

D + E ARE  
MIDPOINTS



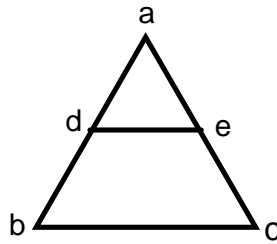
$\overline{DE}$  IS A  
MIDSEGMENT

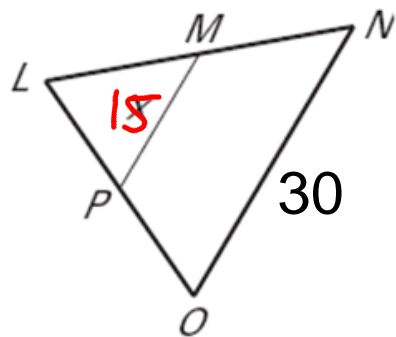
## Properties of midsegments

-the midsegment (segment connecting 2 midpoints), is parallel to the third side of a triangle.

- the midsegment is also half the measure of that third side.

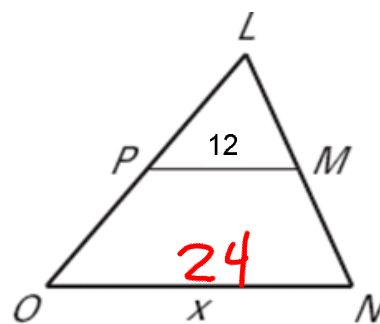
$$\overline{DE} \parallel \overline{BC}$$
$$\overline{DE} = \frac{1}{2} \overline{BC}$$





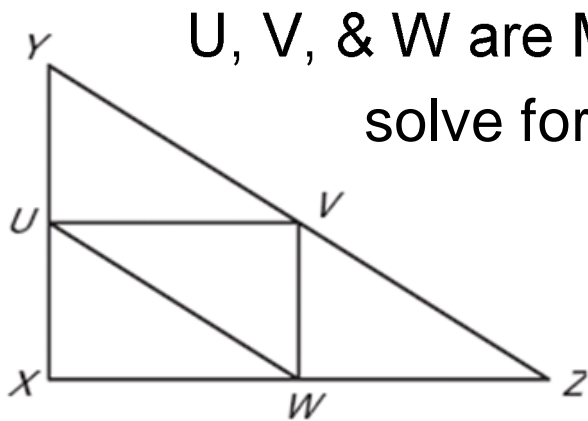
M and P are midpoints

Find X



$$MP = \frac{1}{2} ON$$

$$2(PM) = ON$$



U, V, & W are Midpoints

solve for x

$$YZ = 4x + 10$$

$$UW = 3x - 1$$

$$UW = \frac{1}{2} YZ$$

$$3x - 1 = \frac{1}{2} (4x + 10)$$

$$\begin{array}{r} 3x - 1 = 2x + 5 \\ -2x \quad -2x \\ \hline 1x - 1 = 5 \\ +1 \quad +1 \\ \hline x = 6 \end{array}$$

$$2(UW) = YZ$$

$$2(3x - 1) = 4x + 10$$

$$\begin{array}{r} 6x - 2 = 4x + 10 \\ -4x \quad -4x \\ \hline 2x - 2 = 10 \\ +2 \quad +2 \\ \hline 2x = 12 \\ \underline{2} \quad \underline{2} \end{array}$$

$$x = 6$$

$$A(x_1, y_1) = (-2, 1)$$

$$B(x_2, y_2) = (-2, 7)$$

$$C(x_2, y_2) = (6, 7)$$

FIND:  
 $\overline{AB}$   
 $\overline{BC}$   
 $\overline{AC}$

MIDPOINTS:

$$\overline{AB} = 6$$

$$\overline{BC} = 8$$

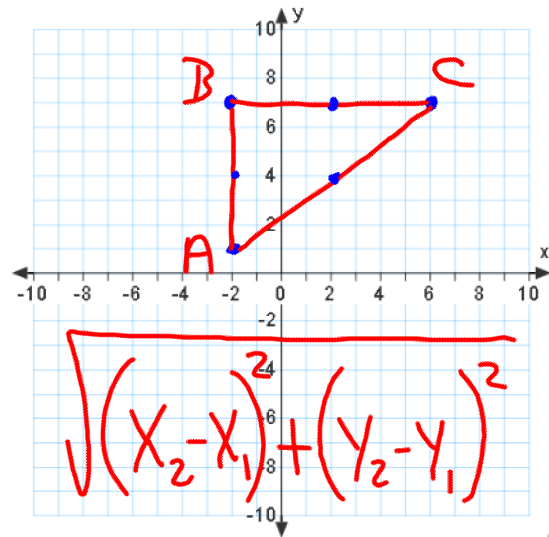
$$\overline{CA} = 10$$

LENGTHS OF  
 MIDSEGMENTS

$$\text{MIDPOINT} \left( \frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

$$\text{MDPT}_{AB} \left( \frac{-2 + -2}{2}, \frac{1 + 7}{2} \right)$$

$$(-2, 4)$$



$$= \sqrt{(6 - -2)^2 + (7 - 1)^2}$$

$$= \sqrt{8^2 + 6^2}$$

$$= \sqrt{64 + 36}$$

$$= \sqrt{100} = 10$$

WORKSHEET 5.1

PROBLEM #4

$\overline{MP}$  IS MIDSEGMENT OF

$\triangle LNO$   
 ?